IOM RAF 6R8R-31

Electric Pressure Sustaining & Reducing 2”- 4”

RAPHAEL VALVES INDUSTRIES

Sep-24

DESCRIPTION

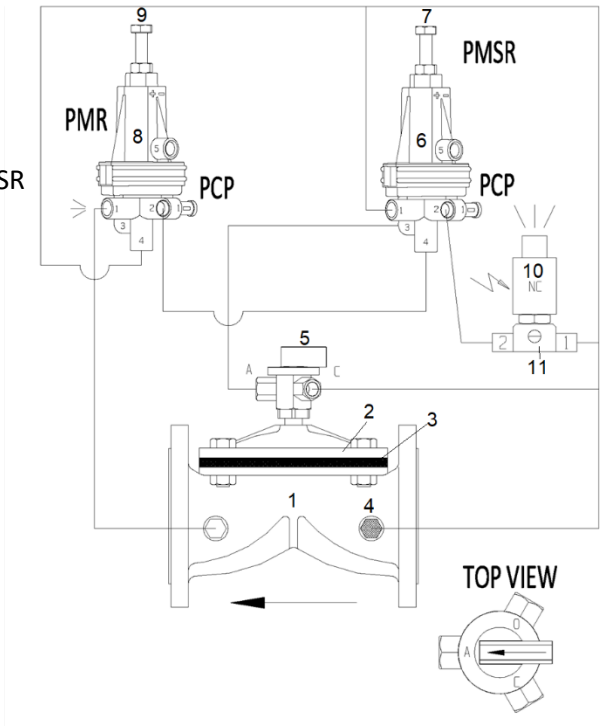
This electrically remote controlled pressure reducing / sustaining valve is an automatic control valve designed to perform two functions; 1. To sustain upstream pressure to a preset minimum. 2. To reduce a higher upstream pressure into a preset lower downstream pressure, and to maintain it constantly regardless of flowrate or upstream pressure fluctuations.

INSTALLATION

- Before installing the RAF, flush the pipeline to remove scale, dirt and other particles that might affect the valve's performance.
- Install the RAF as indicated by the arrow on the valve's cover, showing flow direction.
- Make sure that the solenoid has the right specifications and connect it to the energy source (do note activate).
- It is recommended to install isolation valves upstream and downstream the control valve.
- Turn the 3-way selector # 5 to the "Close" position and turn on the water supply to the RAF.
- Check for leaks; tighten bolts & fittings if necessary.

PARTS LIST

1. Body
2. Cover
3. Diaphragm
4. Self-Flushing "Finger" Filter
5. 3-Way Selector
6. 3-Way Pressure Sustaining Pilot Model PMSR
7. Pressure Adjusting Screw
8. 3-Way Pressure Reducing Pilot Model PMR
9. Pressure Adjusting Screw
10. 3-Way N.C. Solenoid
1. Manual Override



OPERATING INSTRUCTIONS

1. Make sure that there is a downstream flow demand.
2. Turn adjusting screw #7 clockwise all the way.
3. Turn adjusting screw #9 clockwise all the way.
4. Turn the 3-way selector #5 to the "Auto" position.
5. Energize solenoid #10
6. Turn adjusting screw #7 counterclockwise, until water will be discharged from the discharge port of pilot #8.
7. The RAF will start to open.
8. To decrease upstream pressure that will make the RAF open, continue to turn adjusting screw #7 counterclockwise one turn at a time, allowing some time between turns for the valve to respond. Check upstream pressure until required pressure is achieved.
9. To increase minimum upstream pressure, turn adjusting screw #7 clockwise one turn at a time, allowing some time between turns for the valve to respond. Check upstream pressure until required pressure is achieved.
10. To decrease downstream set pressure, continue to turn adjusting screw #9 counterclockwise one turn at a time, allowing some time between turns for the valve to respond. Check downstream pressure until required pressure is achieved.
11. To increase downstream pressure, turn adjusting screw #9 clockwise one turn at a time, allowing some time between turns, allowing the valve to respond. Check downstream pressure until required pressure is achieved.

To open the RAF completely, turn the 3-way selector # 5 to the "Open" position. Please note that by so doing the pressure downstream will be as high as the pressure upstream.

To close the RAF, turn the 3-way selector # 5 to the "Close" position.

To operate the RAF electrically turn the 3-way selector to the "Auto" position.

To maintain preset pressures - energize solenoid # 10 or turn override #11 to the open position (vertically).

To remote close the RAF - de-energize solenoid # 10.

MAINTENANCE

- Check downstream pressure. Adjust if required.
- No maintenance is required. However, from time to time it is recommended to rotate the 3-way selector 360° to prevent sticking by sediments. During the off season, energize the solenoid from time to time for the same reason.
- It is recommended that the RAF will be easily accessible as well as clearly marked to prevent damage.
- In freezing climates, the RAF should be dismantled, and water drained during the winter months.

TROUBLSHOOTING RAF 6R8R-31

PROBLEM	CAUSE	CHECK	SOLUTION
The RAF does not open.	1. The 3-Way selector (5) is in the "Close" position.	1. Check state of the selector.	1. Turn selector to the "Open" or "Auto" position.
	2. The solenoid (10) does not get electrical supply.	2. Check for loose contacts or faulty power supply.	2. Reassemble and activate.
	3. The solenoid (11) gets electrical supply, but the hydraulic valve does not open. Magnetic coil is damaged.	3. Touch magnetic coil with a small screwdriver. It should be magnetized when solenoid is energized.	3. Replace damaged coil with a new one. Reassemble and activate.
	4. Blocked or stuck solenoid (11).	4. No water from solenoid's drain.	4. Turn off water supply to the RAF. Dismantle and clean solenoid's drain. Reassemble and activate.
	5. Upstream pressure is lower than the preset sustained pressure.	5. Check upstream pressure.	2. 5. Increase upstream pressure or reduce set pressure upstream.
	6. One or both pilots are clogged or damaged.	6. No water coming out of the pilot's drain.	6. Turn off water supply to RAF. Dismantle and clean drainers in the pilots. If needed - Replace damaged pilot(s).
The RAF does not close.	1. The 3-Way selector (5) is in the Open position.	1. Check state of selector.	1. Turn selector to the Auto or Close position.
	2. Solenoid is still energized.	2. Check electrical supply to the solenoid.	2. Disconnect electrical supply.
	3. Blocked or stuck solenoid (10).	3. Check manual closing option using selector (5).	3. Turn off water supply to the RAF. Dismantle and clean drain connections of the solenoid. Reassemble and activate.
	4. Foreign object on seal (3).	4. Poor water flow in the valve downstream.	4. Turn off water supply to the RAF. Remove cover and remove foreign object. Check that diaphragm, body and cover are not damaged. Reassemble and activate.
	5. Blocked self-flushing filter (4) or control chamber port.		5. Turn off water supply to the RAF. Remove filter to clean or change it. Clean control chamber port. Reassemble and activate
Unstable pressure.	1. Blocked or damaged pilots.	1. Unstable pressure downstream of the RAF. Or, upstream pressure not met.	1. Turn off water supply to the RAF. Dismantle and clean drains in pilots. Check membranes. In case of internal parts wear, change pilot(s). Reassemble and activate.

RAPHAEL, founded in 1949, is the first Israeli manufacturer of water control valves. RAPHAEL´s research department constantly strives to introduce new and innovative products and solutions for water control systems including water works, fire-protection and irrigation systems.

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